

# PHILADELPHIA MEDICAL TIMES.

SATURDAY, SEPTEMBER 12, 1874.

## ORIGINAL COMMUNICATIONS.

### AN INVESTIGATION INTO THE ACTION OF VERATRUM VIRIDE UPON THE CIRCULATION.

BY H. C. WOOD, JR., M.D.,  
ASSISTED BY JOS. BERENS, M.D.

(Concluded from page 771.)

#### PART II.—VIRIDIA.

##### Section A.—Action on the Circulation.

MR. MITCHELL announced some time since that he had found jervia in the root of veratrum viride. In a more recent, and as yet unpublished, investigation, he failed to get what he was looking for,—the viridia of Bullock,—and was finally forced to conclude that his jervia was the same as the viridia of Bullock. After he had placed some of his jervia in my hands, my first experiments were directed to discovering whether this conclusion was true. Without giving these experiments in detail, it is allowable to state that the symptoms induced by his jervia were precisely those which I had seen caused by viridia. The same general quietness and weakness, the same peculiar trembling or muscular thrill ending in general convulsions, the same free salivation and absence of vomiting and of purging, were present in either case. In elaborate cardiometrical experiments the two alkaloids have also given identical results. I have no hesitation in asserting that they are one. As to the reason or cause of the asserted chemical differences I will not at present offer an opinion, but leave the Messrs. Bullock and Mitchell to settle it between them.

The general effect of viridia upon the circulation is well portrayed in the following experiments, which have been already published with more detail in the *American Journal of the Medical Sciences* for January, 1870.

##### Experiment XXXIII.—A moderate-sized cur.

TIME.	DOSE.	PULSE.	PRESSURE.	REMARKS.
0 m.			120-160	Viridia injected into thigh.
5 "	gr. ½		120-160	
15 "			120 (maximum.)	
20 "		68	65-95	Dog quiet. Injected into peritoneal cavity. Convulsions. Dog quiet.
30 "	gr. ½		65-75	
40 "			125	
45 "			75	

##### Experiment XXXIV.—A stout Scotch terrier.

TIME.	DOSE.	PULSE.	PRESSURE.	REMARKS.
0 m.	gr. 1½	186	120-130	Hypodermically.
5 "			115-125	
10 "		160	110-120	
15 "		128		Dog quiet.
20 "		80	85-105	

These two experiments show that when viridia in suitable amount is given to a dog, the pulse as well as the blood-pressure falls very decidedly, without the production of marked symptoms other than general weakness. In order to confirm this, and at the same time to corroborate the opinion already expressed, that jervia and viridia are one thing, the following experiment was performed with some jervia obtained from Mr. Mitchell:

##### Experiment XXXV.—A stout slut.

TIME.	DOSE.	PULSE.	PRESSURE.	REMARKS.
				<p>0 m. Injections into the femoral vein. The jervia very impure.</p> <p>2 " Dog breathing heavily. Doubtful how much went in.</p> <p>2½ " 135 105-120</p> <p>4½ " 132 105-120</p> <p>6½ " 128 95-100</p> <p>7½ " 112 95-100</p> <p>8½ " 52 30-65</p> <p>9½ " 76 85-90</p> <p>10 " 83 95-105</p> <p>12 " 88 90-100</p> <p>15 " 112 100-110</p> <p>15½ " gr. ½</p> <p>19 " 90 70-75</p> <p>21 " 92 65-70</p> <p>22½ " 96 90-95</p> <p>24 " 92</p> <p>27 " gr. 1-20 100-105</p> <p>28 " 72</p> <p>30 " 48 45-60</p> <p>34 " 70-80</p> <p>35 " 75-85</p> <p>36 " 85-90</p> <p>47½ " 48½ " gr. 1-12 84 50-60</p> <p>49 " 55-65</p> <p>49½ " 70-75</p> <p>50½ " 85-90</p> <p>55 " gr. 1-12</p> <p>58 " gr. ¼</p> <p>66 " 100</p> <p>73 " 60-75</p> <p>74 " 110-125</p> <p>76 " gr. ¼ 85 75-85</p> <p>78 " 90 75-80</p> <p>81 " 132 75-80</p> <p>83 " Clot. Respiration ceased. Heart found to be still pulsating; this continued for some time after entire arrest of respiration.</p>

In comparing this experiment with those previously published, it must be borne in mind that in the last experiment the poison was thrown directly into the veins, and that therefore much more intense and especially more sudden effects are to be looked for; it should also be remembered that it is probable the specimens furnished by the Messrs. Bullock and by Mr. Mitchell were not of equal purity. Due allowance being made for these disturbing causes, I do not see how a close study of the records can fail to reveal the identity of the two alkaloids. The great rise of

pressure during the later periods of the last experiment was certainly owing entirely to the convulsions, the mercury in the cardiometer falling so soon as the muscles relaxed; the phenomenon finds its counterpart in the first experiment with viridia.

*Section B.—Action on the Heart and its Nerves.*

In endeavoring to discover the exact method in which viridia lowers the pulse and blood-pressure, I first investigated its action upon the cardiac inhibitory system, and made the following experiments: those marked (V.) were performed some years since with Mr. Bullock's alkaloid; the others were made with samples furnished by Mr. Mitchell.

*Experiment XXXVI. (V.)—A small cur.*

TIME.	DOSE.	PULSE.	PRESSURE.	REMARKS.
0 m.	gr. 1½	184	146-152	The pneumogastrics had been cut some time previously. Hypodermically given. Pressure during struggles vibrates between 70 and 105. Dog struggling some.
25 "		72	80-90	
30 "		80	65-95	
45 "		76	50-60	
60 "		68	38-60	

*Experiment XXXVII. (V.)—A young mongrel.*

TIME.	DOSE.	PULSE.	PRESSURE.	REMARKS.
0 m.	gr. 1	176	110-120	Par vagum already cut. Given hypodermically.
5 "				
20 "		164	110-115	
30 "		80	75-95	During struggles pressure falls to 70 and rises to 105.
40 "		76	65-85	
60 "		76	65-95	Constant convulsive tremors very marked; when they are especially violent the pressure rises to 110.

These experiments are sufficient to show that the reduction of the pulse produced by viridia is entirely independent of any action upon the cardiac inhibitory nerves. In order to determine whether large doses of the alkaloid paralyze the peripheral inhibitory cardiac nerves, further studies were required.

In two experiments, detailed below, the effect of galvanism upon the par vagum was therefore studied in a dog profoundly under the influence of the drug. An examination of the record of Experiment XXXVIII. will show that after the injection of a fifth of a grain of a very pure sample of the alkaloid into the veins, the cardiac inhibitory nerves were exceedingly sensitive to stimulus, and also that this sensitiveness was very slightly diminished by the further administration of nearly a grain and a half of the poison. In Experiment XXXIX. the amounts of the poison exhibited were very much less, but, as the animal was a very young pup, the effects of these doses were very marked,—arterial pressure falling to one-half its primitive height; yet the sensitiveness of the inhibitory apparatus was preserved intact. The first of the experiments seems to show that in enormous quantity the poison does slightly lessen the sensitiveness of the par vagum, but it is very possible

that the diminution of sensibility alluded to may have been due to exposure of the nerves or some other accidental cause; at any rate, the experiments show that if viridia, even when given in enormous doses, has any action upon the cardiac inhibitory apparatus, such action is so slight that it may be practically disregarded. The experiments are as follows:

*Experiment XXXVIII.—A stout dog. Spine cut.*

TIME.	DOSE.	PULSE.	REMARKS.
0 m.	gr. 1-20	160	Into femoral vein.
10 "	gr. 1-10		Into femoral vein.
16 "		100	
17 "	gr. 1-20		Into a vein of the neck.
19½ "		92	
20 "		110	
21 "			One pneumogastric cut.
24 "		112	
32 "		108	Dog lost considerable blood.
32½ "			Cut remaining pneumogastric.
33 "		116	
38 "		116	A moderately strong current to par vagum caused immediate diastolic arrest.
42 "	gr. 1-10		Into jugular vein.
43 "		120	
43½ "	gr. ½		Into jugular vein. Immediate convulsions confined to the anterior part of the body.
47½ "	gr. ¾		Into carotid artery.
49 "		116	
51 "		116	Galvanic current of the same strength as before has a very decided effect on the heart, but does not completely arrest its movements.

*Experiment XXXIX.—A small young pup. Woorari used, and spine and par vagum cut.*

TIME.	DOSE.	PRESSURE.	REMARKS.
0 m.	gr. 1-10	95-105	Into peritoneal cavity.
13 "	gr. ½		A mild current applied to par vagum caused immediate diastolic arrest.
24 "		40-45	

It having been determined that neither the slowing of the pulse-rate nor the diminution of the arterial pressure produced by viridia is dependent upon an action of the poison upon the cardiac inhibitory apparatus, the question logically presents itself, whether the first of these phenomena is due to an action upon the accelerator cardiac nerves, and the second to an influence upon the vaso-motor nerves, or whether both are the result of a direct influence upon the heart-muscle.

In order to determine whether the slowing of the pulse was independent of the accelerators of the heart, in the following experiment the attempt was made to divide the spine so high up as to paralyze these nerves, and in this way to eliminate their action from the problem. Unfortunately, at the post-mortem, care was not exercised to determine the exact point at which the spine was cut, and the single experiment is open to the objection that the supposed section of the accelerators was not anatomically proven to exist. As, however, the physiological result of such division was obtained, namely, a very slow pulse, such objection is perhaps more specious than valid. The experiment is as follows:

*Experiment XL.*—A terrier pup. Spine cut in lower cervical region. At the autopsy one lateral column found not to be completely crushed.

TIME.	DOSE.	PULSE.	REMARKS.
0 m.		96	Artificial respiration commenced.
3 "		82	
7 "	gr. $\frac{1}{6}$	80	Into femoral vein.
23 "		80	
27 "	gr. $\frac{1}{6}$		Into peritoneal cavity.
34 "		68	
35 "		50	
44 "			Par vagum cut.
52 $\frac{1}{2}$ "		48	

The record of this experiment proves that the reduction of the pulse-rate by viridia is independent of the nerve-centres. As a matter of course, when the pulse is already slowed by division of the accelerators, the fall is not so great after exhibition of the alkaloid as in the uninjured animal. Yet, in spite of the division of the par vagum, the poison reduced the pulse to nearly one-half its original rate. The experiment does not, however, warrant the further deduction that the alkaloid has no action upon the accelerators, since it is evidently possible that an influence upon the nerves and upon the heart-muscle might be exerted simultaneously. The point must be left for future investigation; but I think the present light indicates that if viridia does act at all upon the accelerators, such action must be of minor importance.

The next point which logically offered itself for determination was whether the fall of the arterial pressure produced by jervia is due solely to an influence upon the vaso-motor nerves, or whether the poison lessens the working-power of the heart-muscle. In the following experiments a study was made of the effect of the drug upon the arterial pressure after paralysis of the vaso-motor nerves by section of the cord.

*Experiment XLI.*—A stout dog. Cord cut in the extreme upper dorsal region at 11.15 A.M.; observations commenced 11.25 A.M.; the jervia employed containing a good deal of resin.

TIME.	DOSE.	PULSE.	PRESSURE.	REMARKS.
0 m.			90-100	Artificial respiration commenced.
1 "			80-85	
4 "	gr. 1-20	160	75-85	Into femoral vein.
5 "		135	80-90	
7 "	gr. 1-20		80-90	Into femoral vein.
8 "		140	80-90	
9 "			75-80	
10 "		120	60-70	
11 "		120	50-55	
12 "			50-60	
14 "	gr. 1-10		60-65	Into femoral.
15 "			60-65	
17 "		120	65-70	
20 "		100	55-60	There appears to be a clot in the femoral vein interfering with passage of alkaloid into the circulation.
21 "	gr. 1-20			Into vein in neck.
21 $\frac{1}{2}$ "		108	45-50	
22 "		116	50-75	
22 $\frac{1}{2}$ "	gr. 1-10			Into jugular vein.
23 "			40-45	
23 $\frac{1}{2}$ "		92	45-50	

TIME.	DOSE.	PULSE.	PRESSURE.	REMARKS.
24 m.		110	40-50	
39 "		116	30-35	Pneumogastrics cut a few minutes since. Dog has lost some blood.
42 "		116	50-55	
46 "	gr. 1-10		50-55	Into jugular.
47 "		120	50-55	
47 $\frac{1}{2}$ "	gr. $\frac{1}{2}$			Into jugular.
48 $\frac{1}{2}$ "			45-50	
51 $\frac{1}{2}$ "	gr. $\frac{3}{4}$			Into carotid.
52 "			35-40	
53 "		116	35-40	
55 "		116	35-45	
61 "	gr. $\frac{1}{2}$			Into jugular. Violent convulsions at once confined to the anterior part of the body.
63 "		120	30-35	
65 "		112	35-40	Galvanization of spine caused a general convulsion of a mild type, with a rise of the blood-current to 70 or 80, the pulse instantly becoming exceedingly rapid. On withdrawing the poles, the mercury fell at once, in half a minute standing about 40,—the pulse being 208.

*Experiment XLII.*—A terrier pup. Cord divided in lower cervical region. At the autopsy one lateral column found not to be completely mashed.

TIME.	DOSE.	PULSE.	PRESSURE.	REMARKS.
0 m.		96	100-135	Artificial respiration resorted to at end of first minute.
2 "			95-100	
3 "		82	100-105	
7 "	gr. $\frac{1}{6}$		115-125	Into femoral vein.
9 "				Convulsions in anterior part of the animal.
30 "			55-75	Artificial respiration very active.
34 "	gr. $\frac{1}{3}$			Into peritoneal cavity.
35 "		68	115-125	Convulsive rigors and tremblings in anterior part of body very marked, and, to some extent, in one-half of posterior portion.
44 "		72	115-120	
46 "				Par vagum cut.
52 "			75-85	Dog quiet.

These two experiments, in conjunction with what has been previously brought forward, certainly prove that jervia exerts a direct influence upon the cardiac muscle, lessening not only the rapidity but also the force of its pulsation.

In Experiment XLI. the pressure was reduced to a little more than a third of its primitive amount, and in Experiment XLII. a similar but less decided fall was seen. The temporary rise of the blood-pressure which occurred late in Experiment XLII. was undoubtedly due simply to the general muscular contractions.

In order to investigate still further, and determine more positively, the action of viridia upon the cardiac muscle, the following experiments were performed upon batrachians:

*Experiment XLIII.*—A rather large frog. The spine cut just below the head, and the heart laid bare. Two minute drops of a solution of jervia (three grains to the fluidrachm) were dropped upon the heart, which had been beating at the rate of eighty per minute. Instantly motion ceased, but in a few seconds re-commenced, and a minute afterwards the pulsations were sixty per minute. Shortly after this a little of the solution was injected into the heart, when movement ceased at once,

and only occurred again in the form of a few imperfect, distant pulsations. There was a not very well marked apical white spot, and the ventricles refused entirely to respond to mechanical stimuli. Movements of the mouth, apparently voluntary, continued some minutes after the cardiac arrest.

*Experiment XLIV.*—A moderate-sized frog. A few drops of the solution were thrown into the cardiac region. In a minute afterwards, voluntary motion not being markedly affected, the heart was exposed, and found to be beating twelve times a minute. About a half-minute after exposure, all spontaneous cardiac movements ceased, the heart continuing to respond to mechanical stimuli, and retaining this power for some minutes. Three minutes after the cardiac arrest, the frog made three rapid, successive, vigorous jumps.

*Experiment XLV.*—A frog of moderate size. About ten minims of the solution were injected into the pericardial space. Three-fourths of a minute, voluntary movements vigorous; one minute, spontaneous cardiac movements cease; two minutes, heart does not respond at all to mechanical stimulus; three minutes, feeble movements apparently voluntary; four minutes, frog sits up and opens his eyes widely, and when the balls are touched with a pencil the membranes respond, although somewhat sluggishly.

In the first of these experiments the effect of the direct application of the drug to the heart was very apparent. In the last two experiments the intention was, if possible, to paralyze the heart before the drug was carried freely into the general circulation. In this I was only partially successful, although voluntary movement persisted in a greater or less degree after complete arrest of the heart. Certainly, however, these experiments are confirmatory of those made upon warm-blooded animals, and show that viridia does act upon the heart itself.

#### Section C.—Action on the Vaso-Motor Nerves.

It is, of course, a matter of a good deal of interest and importance to determine whether viridia exerts an influence upon the vaso-motor nerves. It has already been shown that it lowers the arterial pressure by a direct action upon the heart; but this, of course, does not prove that it has no power over the blood-vessels, since it is very possible for the alkaloid to have a double action, affecting both the heart and the vaso-motor centres. It is evident, however, that the cardiac influence of the alkaloid must so mask any action upon the vaso-motor centres which it may exert as to render the proof of such action difficult.

In the following experiment the effect upon the blood-pressure of stimulating a sensitive nerve was taken advantage of to determine the point at issue:

*Experiment XLVI.*—A pup. Par vagum cut. Woorari administered so as to cause complete paralysis, and the dog kept alive by artificial respiration.

TIME.	DOSE.	PRESSURE.	REMARKS.
0 m.		95-115	A mild current applied to exposed femoral nerve.
½ "		160-170	Current broken.
4 "	gr. i-10	95-105	Into femoral vein.
6 "		80-100	Current previously employed.
8 "		136	Maximum reached. Current broken.
16 "		40-50	

TIME.	DOSE.	PRESSURE.	REMARKS.
17 m.	gr. ½		Into peritoneal cavity.
19 "		35-45	
25 "		40-45	Current of strength previously used applied to a freshly dissected axillary nerve.
25½ "		55-60	
26 "		40-45	Current broken.
29 "		20-25	Current applied to brachial nerve.
29½ "		30-35	Current broken.
30 "			
38 "			A mild current applied to pneumogastrics caused instantaneous diastolic arrest of the heart.
39 "		25-30	An intense current applied to a freshly dissected brachial nerve, on side opposite to that before used.
40 "		25-30	Current removed from brachial and applied to previously unused femoral.
41 "		25-30	Current broken.
43 "		25-30	Artificial respiration stopped.*
43½ "		20-25	
43¾ "		15-20	
44¼ "		10-15	
45 "		9-12	Cardiometer removed.

#### Experiment XLVII.—A stout cur.

TIME.	DOSE.	PRESSURE.	REMARKS.
0 m.		85-90	Par vagum cut, and woorari, in small amount, given.
3½ "			Galvanism to femoral nerve caused some struggles.
4 "		100-140	Current broken.
6 "	gr. ¼	90-95	Injected into a vein; clot in latter so impeded progress that it is very doubtful whether any of the alkaloid got into the circulation.
13 "		90-103	
15 "		85-90	Galvanism as before.
15½ "		110-140	Current broken.
18½ "	gr. ¼		Into vein; instantly struggles commenced, soon passing into violent convulsions, not preceded by any fall of the arterial pressure.
21½ "		160-165	Still convulsions. One-half grain of woorari.
26 "		75-80	Dog quiet.
28 "		65-70	
30 "			Violent convulsions, during which the mercury in the cardiometer rose and fell incessantly, reaching 185.
31 "		60	Dog quiet.
32½ "		50-55	More woorari given.
34 "			Mild current to par vagum acted very decidedly on the heart.
46½ "	gr. i		Instantly violent convulsions as before, not preceded by a fall of pressure.
46¾ "		145	
51 "		80	Dog quiet.
52 "		65	
60 "		55-60	Current applied to a fresh femoral nerve.
60½ "		85-90	
60¾ "		75-80	Current broken.
64 "	gr. ½		Injected.
76 "		40-50	
80 "		40-45	An intense current applied to a freshly exposed brachial nerve.
80¾ "		50	
81 "		50-55	
83 "		65	After this the mercury began to fall steadily, in spite of the continuous application of the current to the nerve.

In reviewing these experiments it will be found that in the first (Experiment XLVI.) a tenth of a grain was sufficient to affect decidedly the response of the circulation to the irritation of a sensitive nerve. The arterial pressure had only been lowered fifteen measures, yet a current applied as before the injection raised the column only to one hundred and thirty-five instead of one hundred and sixty. When a sixth of a grain more of the poison had

\* This experiment compared with Experiment XXVI. shows the great difference between the action of the two alkaloids upon the heart, in that in viridia-poisoning an excess of carbonic acid in the blood is powerless to elevate the pressure in the arteries.



been exhibited, the rise produced by currents applied to the largest freshly-dissected nerves had scarcely any effect, and finally failed altogether, at a time, too, when the heart responded most readily to stimulation of the pneumogastrics.\*

In the second experiment, either because the drug used was less pure or the animal less susceptible, larger doses were required to effect the destruction of the reflex vaso-motor activity. It is, of course, possible that viridia paralyzes the afferent or sensitive nerves and thereby prevents the impulse being carried to the vaso-motor centre; but, as the animals show evident signs of pain when the nerve is irritated in viridia-poisoning, the two experiments seem to me to prove that viridia is a vaso-motor as well as a cardiac depressant.

In summing up the present study of viridia, the results obtained may be put in a very few words, as follows. Viridia in its action upon the circulation, as compared with its influence upon the respiration, is very much more powerful than veratroidia. The slowing of the pulse and the lowering of the arterial pressure caused by viridia are due to a direct action upon the cardiac muscles and upon the vaso-motor centres, upon both of which the alkaloid acts as a powerful depressant; upon the inhibitory and accelerator nerves of the heart, viridia acts not at all, or so slightly that its influence is not perceptible.

As has already been stated, Mr. Mitchell affirms that chemically there is no difference between viridia and the older alkaloid of veratrum album jervia. It is a matter of interest to test his conclusion physiologically, but, unfortunately, he has only been able to furnish me with sufficient of the veratrum album jervia to make a single experiment, as follows:

*Experiment XLVIII.*—Acetate of jervia from veratrum album in alcoholic solution. A stout cur; the cord cut in the upper dorsal region at 11.30 A.M. The first cardiometrical observation taken at 12 noon.

TIME.	DOSE.	PULSE.	PRESSURE.	REMARKS.
0 m.		186	65-75	
4 "			70-80	
5½ "	gr. ¼		80-90	Injected into femoral vein.
6½ "			70-80	
6¾ "		150	65-75	
7 "			60-70	Dog trembling slightly.
8 "			70-80	
9 "			75-85	
10 "	gr. 1-30	165	75-85	Into femoral vein.
10¼ "			55-65	
11 "		93	35-45	
12 "		102	40-50	
15 "		105	45-55	
18 "		108	60-70	
19¼ "	gr. 1-30			Into femoral vein.
19½ "			50-55	
20 "		96	40-45	
21 "		99	45-50	
22 "				Pneumogastrics cut.
22½ "		183	70-80	
23 "			60-68	
24 "		180		
25½ "	gr. 1-30		65-75	Into femoral vein.
26½ "		150	57-70	
32 "		126	60-70	

\* I am very doubtful, however, whether a dose was not given about the twenty-seventh minute in Experiment XLVI. and omitted by mistake from the record.

TIME.	DOSE.	PULSE.	PRESSURE.	REMARKS.
34½ m.	gr. 1-15			Into femoral vein.
37 "		150	50-55	
40 "		150	50-55	A slight flow of saliva; it is possibly due to heat and to gag.
42½ "			50-60	
43 "	gr. 2-15			Into femoral vein.
44 "				A struggle; doubtful how much voluntary; it may be convulsive. Commenced in upper part of body and there confined, before the blood-pressure was affected by injection.
45 "		144	35-40	
46 "		126	45-50	
48 "		156 very irregular	30-35	Galvanization of par vagum caused instant arrest of heart.
51 "	gr. 2-15			
53 "				A clot is in veins, and it is doubtful as to how much of remedy penetrated.
60 "	gr. ¼			Into opposite femoral.
61 "			15-20	Cannot count pulsations. Finger inserted through an opening in chest and brought into contact showed a pulse of 165.
62 "	gr. ¼			Galvanization of pneumogastrics arrests heart.
63 "		210		Counted as before.
70 "	gr. ¼			Injected directly into heart.
75 "	gr. ½			Injected into a large vein in neck.
78 "		64		Motions of heart very weak to finger.
80 "				Cardiac pulsations ceased. Heart does not respond at all to strongest currents. The intestines in active motion, and respond well. Voluntary muscles respond well. The dog has not had violent convulsions at any time. During last half-hour has been perfectly quiet.

At the time this experiment was made, I thought more of the veratrum album jervia would be forthcoming, or otherwise the character of the experiment would have been different. In examining the record it will be seen that the drug produced a steady fall of the arterial pressure and lowering of the pulse-rate up to the time when the pneumogastrics were cut, whereby the pulse was greatly accelerated. After the division of the inhibitory nerves the continuous exhibition of large doses failed to affect the pulse, although the pressure fell very decidedly, even, at last, to zero. When the arterial pressure was almost at a minimum, the pneumogastrics were still sensitive to galvanic currents. Finally the heart was arrested, and its muscle was unable to respond to the strongest stimuli. As the reduction of the arterial pressure occurred after division of the spine, *i.e.*, paralysis of the vaso-motor system, it obviously was the result of a direct action upon the cardiac muscle. Making the obvious deductions from these facts, the above experiment would seem to indicate that jervia of veratrum album acts first as a stimulant to the cardiac inhibitory nerves, slowing the pulse through them, and that after their section it reduces the force but not the number of the cardiac pulsations.

If this be so, the alkaloids of *V. album* and *V. viride* are not the same, and Mr. Bullock is right. The conclusion cannot, however, be accepted as proven, since with the jervia was injected a quantity of alcohol, and it is possible that after section of the pneumogastrics this alcohol may have increased the rate of

the cardiac pulsations. On the other hand, the convulsions caused by the true jervia were not nearly so violent as those ordinarily seen with viridia. So that, whilst confirmation is needed before any positive opinion can be reached, the evidence thus far points to the distinctness of the two alkaloids.

#### PART III.—GENERAL CONSIDERATIONS.

Having an intimate knowledge of the action upon the circulation of the only two active principles of *veratrum viride*, it would seem an easy task to determine the effect of the drug. Unfortunately, however, the exact proportion in which the alkaloids exist in the root is not known. Mr. Bullock obtained the viridia much more abundantly than the veratroidia, but Mr. Mitchell found the former alkaloid the least plentiful. Neither of these investigators claims that he obtained more than a portion of the active principles in the roots which he worked with, so that the question as to which alkaloid is most abundant seems doubly unsolved. It appears to me probable that the viridia is the more abundant, because in *veratrum viride* poisoning the circulation is affected so very much more intensely than the respiration.

Be these things as they may, it is plain that in those actions in which the two alkaloids agree, the crude drug will have most power, and, *vice versa*, if in any influences the two alkaloids are antagonistic, in such influences the *veratrum viride* will be least powerful. In what points, then, do the two alkaloids agree? Evidently in two,—namely, their depressing influence upon the force of the cardiac muscle, and upon the vaso-motor nerves.

Veratroidia lowers the pulse-rate by its action upon the inhibitory centres; viridia lowers the pulse-rate by benumbing, as it were, the muscle. These actions are not the same; it is even conceivable that they may to some degree be antagonistic, or, in other words, that a benumbed heart-muscle may not respond as quickly as normal to an inhibitory impulse. Any one who has used *veratrum viride* habitually must have noticed, more or less frequently, good effect produced by it before the pulse-rate was materially diminished. This, it seems to me, is explained by the above considerations, the arterial pressure being affected before the pulse-rate.

Although it might seem fitting to discuss the clinical uses of *veratrum viride* at length, yet I will refrain from so doing, for several reasons. In the first place, there is very little that is actually new to be said; in the second place, my own opinions have been sufficiently expressed elsewhere; in the third place, any doctor knowing the physiological action of this drug ought to be able to apply such knowledge to the treatment of disease. The practical value of the present study is in rendering clear and definite the clinical employment of the drug rather than in opening any new uses for it. It has been over and over again distinctly stated that the action of *veratrum viride* is that of a pure depressant. Yet its use in various *asthenic* diseases is still from time to time recommended in the journals. It hardly seems

necessary to stigmatize such practice as irrational and harmful. To weaken still further an already weak and struggling heart because the pulse-rate is high is simply murderous.

Before closing this article, I desire to call attention to the great similarity between many of the effects of *veratrum viride* and of depletion. If one-third of the circulatory fluid is withdrawn by bleeding, of course the inflamed part is more or less starved. *Veratrum viride* really withdraws the circulating fluid from the inflamed part almost as directly as does venesection. The capillaries of the inflamed tissue are distended, and the blood rushes to and accumulates in the part largely because the capillaries are thus distended. Under the influence of the *veratrum* the general rapidity of the blood-current is lessened, and of course the inflamed tissue feels this in its blood-supply; but, more than this, all the capillaries of the body are enlarged, and, claiming their share of the vital fluid, withdraw it from the inflamed part. If the average increase of the vessels should amount to one-third their original calibre, an effect in some degree similar to that produced by the removal through a vein of one-third of the blood ought to be obtained for the time being.

The extraordinary value of the drug in many sthenic conditions probably no one who has used it with cautious boldness will deny, and with our present light the *rationale* of its action seems very clear.

#### CASES CURED BY ELECTRICITY.

BY HUGO ENGEL, M.D.

##### *Incomplete paralysis of both legs—Pes valgo-equinus—Lateral curvature of the spine.*

IN October, 1873, I was called to see a lady. While attending her, my attention was called to her little daughter Mary, three years old. The child was creeping on the floor, and looked emaciated, or, rather, her face had that expression so often found in hunchbacked persons. The mother could give no history, except that the child had lost power suddenly ten months before.

The legs of the child were emaciated, the left more than the right, and the muscles of the back on the left side were less fully developed than those on the right side. The left foot was a beginning *pes valgo-equinus*. The seventh dorsal vertebra seemed to be painful, and when I tried to make the child stand on its feet there was at the same place a slight lateral curvature of the spine towards the right side.

A physician, when applying electricity in children, especially if he desires to establish a diagnosis with its aid, should be careful not to let the child see either the apparatus or the electrodes to be employed, and to make use of tepid water. When children once commence crying upon such an occasion they seldom cease, and any diagnosis in regard to electro-sensibility is impossible. The touch with a cold electrode will prevent the detection of a sensitive point.

I used a constant current of fourteen cells along the spinal cord, leaving the positive pole at the cervical region. I moved with the negative from vertebra to vertebra down to the sacrum. When I reached the sixth and seventh dorsal vertebrae, the child moved and screamed: here was the painful spot. I then ap-

plied the faradic current, with a dry electrode brush, left the positive (common) electrode on the cervical portion of the spine, and moved the negative (armed with the brush) all over the skin, with the following results:

The electro-sensibility was very much impaired all over on the left, and not at all on the right side of the back; the same disturbance of sensibility on the legs, but here it was disturbed, too, on the right one, only less than on the other; and normal electro-sensibility on the arms, face, and front of chest. I now wetted the common electrodes of the faradic current, for the purpose of trying the electro-muscular contractility. Every muscle contracted, but those on the right side more than those on the left, and the left tibialis anticus not at all. I now used a very strong galvanic current\* (twenty-eight cells), and placed the two electrodes on the course of the ramus profundus nervi peronei sinistri. After a few moments the child seemed to suffer pain. Slight movements of the foot set in now when I interrupted the current, a sign that the tibialis anticus, the paralysis of which was the cause of the pes valgo-equinus, was not totally unamenable to treatment. When I now applied a strong faradic current over the muscle mentioned, the muscle contracted, and the foot assumed a normal position as long as the contraction of the tibialis anticus produced by the current counteracted the action of the peronei muscles.

As the electro-muscular contractility was nowhere lost, I gave a favorable prognosis, and commenced the treatment at once. I told the father of the child to put up in a room an enclosure similar to a large box with the top and bottom boards taken out, to make the sides of the enclosure perfectly smooth, and to place the child with its playthings within the enclosure, and under no circumstances to allow the child to walk until it should climb with its hands to the boards and commence to stand and to walk by itself.

This was October 21, 1873. I had the child brought to my office every day, and made use of the following treatment:

At first I applied the current of the constant battery (ten cells) over the spinal column. I placed the anode on the second dorsal vertebra and the cathode on the painful spot for ten minutes; then I used a current of twelve cells, and removed the cathode to the last lumbar vertebra, sometimes a little lower, to the sacrum, and towards the hip-joints for about two minutes.

I may as well state here that in about three weeks I had been obliged to decrease slowly the strength to six cells, the normal sensibility having been restored. I had to decrease in the same way the strength of the secondary induction current.

The latter was always had recourse to immediately after the action of the galvanic current, in the same séance. I faradized all the muscles of both legs and the muscles of the back on the left side. This procedure occupied about fifteen minutes. When I reached the left tibialis anticus I always sent at first a constant current over the region of the ramus profundus nervi peronei for about a minute, and then continued faradization as above mentioned.

The child was under this treatment for three weeks. November 12, 1873, the following amelioration had taken place. The surface-temperature all over the before-affected and in-temperature-lowered parts was normal. The child could walk a few steps alone, very timidly as yet, but without help; there was no curvature of the spine, and the left foot was but slightly abducted. The electro-sensibility of the parts had been

restored to the normal status, and the electro-muscular contractility of all the muscles was again a normal one, except that of the left tibialis anticus, which always required a stronger faradic current to produce the same contractions as its electrically stimulated confrater on the other leg. All the muscles had considerably increased in size.

I now had the child brought to me every second day, and, after two weeks more, twice a week. Once a week I applied the different currents as in the beginning of the treatment, only decreasing the strength of the currents; at the other séances I simply faradized the left tibialis anticus, and with such a good result that on Christmas eve following I discharged the child cured, and permanently so, as I had the pleasure of convincing myself a few days ago. During the last two weeks I had prescribed ol. morrhue and elix. cinchon. ferrat.

This case has, besides its result, some interesting points, which it may be worth while to mention here as useful hints in the application of electricity.

1. The case was one of spinal origin. There never had been any symptoms of brain-affection; the child was intelligent, and the muscles of the face were not affected.

2. There had been evidently in the beginning inflammation of the meninges at the seat of pain, with following exudation, extending farther down, and more on the left than on the right side.

3. The motor and sensitive nerves on the left side of the back especially suffered in consequence of pressure; therefore there were anæsthesia of the skin on the left side and paralysis of the muscles of the same side, and the muscles on the right drew the spinal column laterally to their side. When those of the left side were in their normal condition again, the curvature of the spine ceased. The same phenomenon took place with the pes equinus, which had a similar origin, the tibialis anticus being paralyzed, and the antagonistic muscles acting alone abducted and turned the foot outwards. As soon as this paralysis was overcome, the foot regained its normal position.

4. The galvanic current had a catalytic (electrolytic) effect on the exudations of the spinal cord, and a conduction-exciting influence on the motor nerves of totally paralyzed and perhaps degenerated muscles.

5. The faradic current improved the nourishment of the paralyzed muscles, which could regenerate their fibres.

#### CASE OF SUPPOSED OPIUM-POISONING. —USE OF ATROPIA.

BY J. S. RAMSEY, M.D.

WILLIAM G., aged 48; occupation machinist; unmarried. Has been strictly temperate until within about a year, since which time has been addicted to the occasional immoderate use of strong drink. Has rarely extended his "sprees" beyond a period of five or six days, then ceasing the use of liquor for a varied time ranging from one to four months.

On Monday, August 3, 1874, about 10.30 P.M., I was called to see the above-named in consultation with Dr. B. F. Witmer, formerly of Millersburg, Pa., and obtained the following history of the case. Patient had been on a continuous spree since the previous Monday; at no

\* Several inquiries having been made, I will here mention that by "constant" or "galvanic" current I mean the current generated by the large constant battery manufactured by Otto Flemming, No. 13 North Ninth Street, Philadelphia. The cells thereof are stronger than Daniel's elements, in the proportion of about Flemming two and a half, Daniel four.



time worse than in an exhilarating state of inebriety. He had not been drinking more than usual on the day I first saw him, but had returned to his boarding-house and lain down and slept during the afternoon, arising well sobered about 5 P.M. He shortly after went out, and in about an hour was found by friends in a saloon (of indifferent character), in a condition which rendered it necessary that he should be assisted to his home. Here he was allowed to lie on a lounge and sleep. In this way he remained until shortly after 10 P.M., when it was noticed that he was breathing peculiarly, and that his face was of a bluish purple.

On examination, we found him wholly unconscious; pupils firmly contracted to the size of a pin's head; respiration varied, at no time more than three, and on several carefully-noted times only one a minute. Pulse 120; breathing stertorous and puffy; all sensation was absent, and respiration was unaltered on the application of handkerchief well saturated with spirits amm. arom. We attempted to administer remedies by mouth, but failed, he being unable to swallow. After many fruitless attempts to rouse him, as a final resort we administered hypodermically one-thirtieth grain of atropine sulph., and, immediately following it, an injection per rectum of spts. amm. arom., ʒiiss in a pint and a half of strong soap-suds. In less than half an hour after injections, the respiration increased to fifteen per minute, and the pupil dilated to the natural size; at the same time the patient became semi-conscious, and on the following morning he was so far recovered as to be able to go on his usual way.

The question naturally arises, Was the case one of opium- or of alcoholic poisoning? Mr. G. since informs me that the only thing he drank was one glass of ale. The history of the case, with the subsequent result, certainly points most strongly to the former, especially as he is known to have lost quite a large sum of money at the time.

An important point to be noted is the rapid increase in the respiration, and subsequent recovery, after the injection hypodermically and per rectum.

## TRANSLATIONS.

THE TREATMENT OF SNAKE-BITES BY HYPODERMIC INJECTIONS OF AMMONIA (Dr. Kleinschmidt: *Berliner Klin. Wochenschrift*, No. 24, 1874).—On the morning of the 24th of July, Dr. Kleinschmidt was called to a boy aged 9 years, who, while plucking berries during the previous day, had been bitten by an adder. Upon his arrival, he found the patient sitting up in bed, with a fixed gaze, and with his countenance covered with cold sweat. The entire right upper extremity was greatly swollen, the skin being tightly distended and of a bluish color, and upon the least movement the boy uttered loud shrieks. The circumferences of the arm and fore-arm of the right side were found to be thirty and thirty-two centimetres respectively; the measurements taken at corresponding points upon the left limb being sixteen and fifteen centimetres.

The swelling upon the right side extended beyond the arm and over the right breast and side, and upon these localities there was also noticed an eruption, somewhat similar to that of nettle-rash; the axillary glands of this side were also involved. The position of the bite could not be seen, but the bystanders said that it was upon the middle finger, upon which, as well as upon the dorsal surface of the hand, several bullæ

were to be seen. Under these circumstances, there could be no indication for cutting out the wound, nor for cauterizing it, and since, in a case of adder-bite which had been treated but a few days before, but in which the symptoms were much less threatening, leeches had seemed to be of service, they were ordered to be used. The child also took, by the mouth, solution of caustic ammonia and small pieces of ice to counteract the tendency to vomit which was present, and, as the bowels were constipated, a laxative was administered.

When the patient was seen the next day, it was found that he had passed a restless night, and that his condition had become more serious. The swelling of the wounded limb was more marked; the circumference of the arm being thirty-two, that of the fore-arm thirty-four centimetres. The entire right side was more swollen, and the scrotum, which on the previous day was free, was now also involved. The features of the patient presented an indescribable expression of anxiety; the pulse was small and quick, beating 120, and the temperature was 39.9° C. If the swollen part of the body was touched, the boy gave utterance to still louder screams than upon the preceding day. A renewed application of leeches was ordered, and the amount of the solution of caustic ammonia to be taken was increased. Dr. Kleinschmidt then returned to his house, and, while reading a medical journal, met with an article upon the treatment of snake-bites by means of the hypodermic use of caustic ammonia. He at once seized his hypodermic syringe and hastened to the patient, and, having filled the instrument with a solution of caustic ammonia, he injected the entire quantity beneath the skin of the axilla. After the expiration of half an hour, under the constant application of cold compresses, the pain seemed to be somewhat less, and about the wound made by the syringe was noticed a bluish tinge. In the evening of the same day the child had ceased to vomit, the expression of anxiety upon the features was not so marked, and no increase in the amount of swelling had taken place. On account of the intense pain which was still present in the swollen arm, small punctures were made in the skin, and through them a greenish-yellow fluid slowly discharged itself.

The next morning the boy was comfortable, and, upon measurement, it was found that the injured arm had decreased in size. Much fluid had come away during the night, and the patient had slept much more quietly than had previously been the case since his accident. At the point of entrance of the syringe a large black slough had formed, but no pain at this point was complained of. The pain in the arm was much more moderate, and was present only in response to severe pressure. A marked improvement was noticed in the general condition of the child, the vomiting had ceased, and the appetite was good. During the next eight days the swelling of the limb gradually diminished, until it became of about the normal size, the bluish-green color of the skin yielded to a greenish yellow, and the child could again use the limb freely.

Dr. Kleinschmidt concludes that, although (since but four per cent. of persons bitten by snakes of this kind die) it cannot be said that this boy would not have recovered under a purely expectant treatment, still, the solution of caustic ammonia must be considered as the most efficacious antidote against the poison of serpents, and the one, too, which is the most speedy in its action. He will be inclined in the future to use this treatment, not only in cases of dissecting-wounds and of hydrophobia, but also in malignant pustule and glanders, in which diseases we are all so much at a loss for a remedy that shall be certain in its effects.

W. A.



**PRIMARY INFECTIOUS INFLAMMATION OF BONES AND OF THEIR MARROW.**—Under the above title Lücke (*Deutsche Zeitschrift f. Chirurgie*, iv., 1874, pp. 218-245) describes a disease which is very variously named by authors, but which perhaps is best known by the name of spontaneous osteomyelitis. Lücke regards the disease as one due to infection which takes its start from the marrow or periosteum, which has hitherto been intact. It is possible for the disease to remain limited to the locality at which it originates, but it is quite common to meet with secondary deposits before suppuration has been established at the point originally involved. The disease occurs only in youth up to the time that the growth of bone is complete. Its occurrence appears to be favored by damp, cold weather, and it is consequently most frequently met with in the spring and autumn; but from this it must not be inferred that it is not liable to be met with during the other seasons. Heretofore, the affection has been thought to be caused by the influence of cold exclusively, and Roser on this account speaks of a pseudo-rheumatic inflammation of the joints and bones. Lücke has, however, in a series of cases been able to establish the fact that an injury has served to start the disease into action, and he infers that both these causes are concerned in leading to the local disturbances of circulation whence the affection is developed. Consequent upon the injury is a period of incubation of two or three days, then after a chill an intense fever sets in, which speedily becomes typhoid in its character. The formation of a differential diagnosis between this affection and typhus is sometimes difficult, but it can generally be made by noting the existence of the local trouble early in the attack. The presence, however, of this local inflammation may cause the disease to be looked upon as acute articular rheumatism. Catarrh of the lungs sometimes sets in early in the disease, and may be quite evanescent, or, on the other hand, may speedily lead to a fatal issue. The cause of this occurrence is to be sought in a fatty embolism of the lungs, as was established in two cases by post-mortem examinations; and Lücke believes that the process originates in a solution of the fat-cells of the marrow, and the entrance of free fat into the veins. The local symptoms begin with the chill, which at the most has been preceded by but slightly painful sensations, which from this time become rapidly more severe. The starting-point of the affection is either in the periosteum or the marrow, but the second of these tissues is usually involved in the process. The long bones are the most apt to be affected, and these most frequently at their lower extremities, while the involvement of the spongy bones is more rare. It usually results in suppuration with necrosis of a greater or less extent, and if the epiphysis is the part attacked its separation is a usual occurrence. The neighboring joint of course is commonly involved, and this can take place even when the disease is seated at some distance from the articulation. It is possible that the disease may be confined to the primary deposit, and run a favorable course; but usually, even before suppuration at the starting-point occurs, secondary deposits are found in other bones, in some of the soft parts, or, worst of all, in the internal organs. These secondary deposits may also be preceded by chills, and then some of the appearances of pyæmia are presented. Lücke is inclined to look upon the whole process as pyæmic, especially since he has succeeded in finding micrococcus in the marrow at a time when there had been no communication with the outer air; and from this analogy with pyæmia, he thinks himself justified in regarding the process as one of infection. W. A.

**NEW METHOD OF LIGATING THE PRIMITIVE CAROTID ARTERY** (*Bulletin de la Soc. Méd. de la Suisse*—

*lande*, 1873, No. 11).—In a paper read before the Medical Society of Southern Switzerland, Dr. Rouge, of Lausanne, proposes the following new method of ligating the primitive carotid artery, a method which is as feasible for ordinary cases as the one usually employed, and is claimed to be much less dangerous and more easy of execution than the operation of Sédillot, in which the ligature is applied to the inferior half of the vessel between the origins of the sterno-cleido-mastoid muscle. In numerous cases he thinks that this method is the only one that can be recommended. As yet, indeed, no opportunity has occurred of testing the operation upon the living, but Dr. Rouge has performed it many times upon the cadaver, and always with the same result. The head being strongly extended, and at the same time turned towards the opposite side, an incision is to be made, usually about opposite to the thyroid cartilage, along the posterior edge of the sterno-mastoid muscle, which, owing to the position of the head, is strongly prominent. The vessel can then be reached without trouble by working forwards and inwards along the inner surface of the muscle; no annoyance is experienced from the jugular vein, which goes to the front without any special effort on the part of the operator, and the artery can be readily isolated and secured by the ligature. The introducer of this method thinks that it should always be employed when tumors situated in the anterior cervical region present serious difficulties in the performance of the usual operation. This is apt to be the case when these tumors are of strumous origin (and tumors of this class are extremely frequent in Switzerland), and here, too, the carotid artery is found out of its usual place, being thrust backward to a greater or less degree. Dr. Rouge claims also that his method has the advantage of permitting the application of the ligature at various distances below the bifurcation of the artery, and at the same time the drainage of the wound is facilitated by its situation. As a final advantage, it may be urged that the cicatrix left by the wound of incision would lie more to the side and back of the neck than usual, and by the projection of the sterno-cleido-mastoid muscle would be less strikingly visible. W. A.

**IGNIPUNCTURE** (G. Juillard: *Centralblatt für Chir.*).

—Some time ago, Richet advised a mode of treatment for chronic affections of the bones and joints, to which the name of ignipuncture was given. This mode of treatment was carried out by punctures into the affected parts, made with a glowing needle. The instrument used by the originator of the treatment, Richet, was a needle of platinum, four or five centimetres in length, which was attached to a ball for the purpose of retaining heat. Juillard had made for the same purpose a very narrow-pointed loop of platinum wire, which he heated as in other galvano-caustic operations, and which he found much lighter and much more easily manipulated than the needle which was previously used. The operation is performed by introducing the glowing needle into the tissues to a sufficient depth to penetrate into the affected joint or into the diseased bone, and then by at once withdrawing it. This operation is to be repeated many times if it is found to be necessary. The pain attending it is not very intense, an anæsthetic not being always needed. After the operation, the limb is to be kept at rest, and cold compresses are to be applied over the part. If there was any exudation either of a serous or purulent character present in the joint at the time the needle was introduced, it made its exit through the opening; but it usually ceases to flow at the expiration of ten or twelve hours, and only in exceptional cases was the operation followed by a fistula. The perforations usually healed by first intention, and when they were followed by fistulæ it was because the needles

were left in the tissues for too long a time. Ignipuncture is usually followed by a marked diminution of pain and fever, and there is no inflammatory reaction consequent upon it.

The results of this operation are reported to be very encouraging. The cure of affections of the joints usually results in ankylosis, but sometimes motion is preserved. Favorable results can be looked for with more confidence when the affection is an arthritis of a purely purulent or fungous form, but it is often necessary to repeat the introduction of the needle four or five times. Even when a complete cure is not attained, some improvement often follows, and in no case are there any ill results.

W. A.

**THE ACTION OF MONO-BROMIDE OF CAMPHOR.**—M. Bourneville gives (*Le Progrès Médical*) a series of experiments performed by himself on various animals, to whom he administered various doses of this substance, with a view to ascertain its physiological action. His conclusions are as follows. Bromide of camphor diminishes the number of pulsations of the heart, and determines a contraction of the auricular vessels (guinea-pigs and cats). It diminishes the number of inspirations. It lowers the temperature uniformly in fatal cases. This lowering goes on to a greater and greater degree, to the end. In cases which recover, this period of lowering is succeeded by one of elevation of temperature, which returns to the original point, but in a longer time than that during which the abatement has operated.

Bromide of camphor possesses incontestable hypnotic qualities. Tolerance is not established with this medicine, and its use gives rise, at least with guinea-pigs, to a rapid, progressive emaciation.

## THERAPEUTIC NOTES.

**HYDRASTIN IN GONORRHOEA.**—As far as internal treatment is concerned, I merely give in the first stage a saline aperient, to be continued three times daily for four or five days, together with the following injection: hydrastin, one drachm; solution of morphia (Magenie's), two drachms; acacia mucilage to four ounces: to be used three times daily. This I have employed when inflammation ran very high, without even the slightest ill effects, and have used it in every stage of gonorrhoea with the most beneficial results when every other treatment, both internally and locally, had failed, including red sandal oil. But there is one remark I wish to make regarding the use of injections which medical men generally forget, and that is, to tell their patients to micturate previous to its use. Unless this is done, injections in gonorrhoea are useless. Hydrastin is used very much in different parts of the United States, and very successfully. My last patient was a farmer, who had had a gleety discharge for seven months. His medical man had quite wearied him out with injections, etc., all to no purpose. I at once tried the hydrastin, and in two weeks he was quite well.—*J. N. Bredin, L.R.C.S.I., etc., in London Lancet.*

**TO CHECK VOMITING FROM COUGH.**—Consumptives and others suffering from paroxysms of cough frequently vomit their food in such paroxysms. Dr. Woillez recommends swabbing the pharynx, before eating, with a concentrated solution of bromide of potassium,—

R Pot. brom., ʒij;  
Aqua destil., ʒiv,

—warning the patient not to cough for a few minutes

after the application. The same treatment is recommended for the vomiting of pregnancy. It is said to be very successful.—*Missouri Clinical Record*, August, 1874.

### TONIC IN ANÆMIA WITH CONSTIPATION.—

R Ferri sulph., gr. xlviii;  
Magnesii calcinat., ʒi;  
Tinct. quassiae, fʒii;  
Aq. menth. pip., fʒvi.—M.

Sig.—Tablespoonful in water, three or four times a day.

### IN LEUCORRHOEA.—

R Cantharidis, gr. iii;  
Camphoræ, gr. xvi;  
Ext. hyoscyami, gr. x.—M.

Ft. in pil. no. x.

One to two may be taken daily, in cases of nervousness accompanied by leucorrhœic discharge.

### CONSTIPATION.—

R Hydragr. protochld., gr. iii;  
Pulv. rhei,  
Pulv. jalap., aa gr. iss.

Div. in chart. no. x.

Sig.—One every two hours, until the desired effect is produced.

### TOPICAL APPLICATION IN TOOTHACHE.—

R Chloroformi,  
Vini opii, aa fʒss;  
Sp. menth. pip., fʒvii.—M.

Soak a piece of cotton in the mixture and place it in the painful tooth, placing another piece outside of the tooth on the gum, and a third on the jaw over the root of the tooth.

### ABSORBENT POWDER.—

R Magnesii calcinat., ʒss;  
Sodii bicarb., ʒi;  
Cretæ præparat., ʒi, gr. xv;  
Pulv. sacch. alb., ʒiiss.

M.—Div. in chart. no. x. One to be taken half an hour before meals in acid dyspepsia.

### ANTISPASMODIC PILLS.—

R Pulv. assafoetidæ,  
Pulv. camphoræ, aa ʒvi;  
Ext. belladonnæ, ʒii;  
Pulv. opii, ʒi;  
Syrupi, q. s.—M.

Ft. in pil. no. clxxx.

One to be taken the first day, two the second, etc., until six are taken daily or two or three times a day. Useful in hysterical and spasmodic nervous affections, in connection with bromide of potassium in doses of ten to fifteen grains.

### IN HYSTERIA.—

R Chloride of gold and sodium, grs. iv;  
Gum arabic, ʒi;  
Sugar, q. s.—M.

Divide into forty pills, of which one may be taken three or more times a day.

**SUBCUTANEOUS INJECTIONS OF APOMORPHINE.**—M. Garville recommends the hypodermic use of apomorphine as an emetic. In cases of poisoning where it is impossible to administer medicine by the mouth, this remedy may prove of the highest value. An injection of one-sixth of a grain in one scruple of water will produce copious emesis within five minutes.

# PHILADELPHIA MEDICAL TIMES.

A WEEKLY JOURNAL OF  
MEDICAL AND SURGICAL SCIENCE.

*The Philadelphia Medical Times is an independent journal, devoted to no ends or interests whatever but those common to all who cultivate the science of medicine. Its columns are open to all those who wish to express their views on any subject coming within its legitimate sphere.*

*We invite contributions, reports of cases, notes and queries, medical news, and whatever may tend to increase the value of our pages.*

*All communications must bear the name of the sender (whether the name is to be published or not), and should be addressed to Editor Philadelphia Medical Times, care of the Publishers.*

PUBLISHED EVERY SATURDAY BY

J. B. LIPPINCOTT & CO.,

715 and 717 Market St., Philadelphia, and 25 Bond St., New York.

SATURDAY, SEPTEMBER 12, 1874.

## EDITORIAL.

### AID FOR THE DESERVING.

WE hear it rumored that the managers of the Homœopathic Hospital in this city intend to appeal to the citizens for pecuniary aid. If we mistake not, the institution has already tasted the sweet sustenance that flows from the legislative fountains of our good mother the State of Pennsylvania. To aid in the good work of raising money for a deserving charity is always pleasant and profitable, and we propose to-day to give a few facts concerning this hospital, so that our readers may be able to say a word or two for it whenever opportunity offers. We do this the more willingly because, if reporters are to be at all believed, the hospital is especially under the patronage of our worthy Mayor.

On the 26th of last May a young girl named Lizzie Tamplin was shot, and taken to the Homœopathic Hospital. In the course of a few days afterwards she died, and, a certificate of death from hemorrhage of the lungs having been given by the physician of the Homœopathic Hospital, her funeral was announced. Coroner Brown happened to see this announcement in the *Ledger*, and, about an hour before the time appointed for the burial, entered the house, and actually took the body out of the coffin, surrounded by the relatives. At the autopsy, a bullet was found in the brain; the hole in the skull had been filled with lime, and a piece of flesh-colored plaster placed outside, so as to con-

ceal it. We believe this case is to go to the courts, and hope our worthy neighbors will have justice done them.

A few weeks since, a policeman found, near Twentieth and Market Streets, a man named James Culliman, suffering from a frightful lacerated compound comminuted fracture of the thigh, and other injuries, the results of a fall out of a fourth-story window. The order of the Mayor being to take "accidents" to the Homœopathic Hospital, the injured man was conveyed there, about three o'clock A.M. During the whole of Sunday he was left in the hospital without any measure of relief being adopted until about ten o'clock in the evening, when, without a consultation of surgeons, the limb was amputated by a person not connected with the hospital; the patient dying about one o'clock the same night. It does not seem very remarkable that the Coroner's jury brought in a verdict that—

"The said James Culliman came to his death, August 17, 1874, from the combined effect of shocks received by a fall at No. 1917 Market Street, August 16, 1874, and from the amputation of his limb performed at the Homœopathic Hospital. *In the opinion of the jury, the delay of the physicians in charge of the hospital in their application of medical treatment to the deceased is in the highest degree censurable.*"

Lieutenant Wilkins of the police visited Culliman at the hospital during Sunday. He states that he was told by the doctor in charge "that he could not treat this and other cases until the visiting surgeon was consulted. I said, 'Then the man must lie here and die.' He said, 'No; in case of actual necessity I could call somebody in to do it.' We then talked about the case, and he said that the man was as easy as he could be under the circumstances, and he had no fear of his life."

In these cases, sufficient legal inquiry has been made to render the facts indisputable.

The following is given by a reporter for *The Sunday Press*:

"On the night of May 2, 1873, James Campbell, an elderly man, was hit on the head with an axe, in a quarrel with his son-in-law, at his house in a court running off Race Street above Fifteenth Street. Campbell was by the police taken to the Homœopathic Hospital, and the news telegraphed to the Central Station. A dozen reporters, hungry for a murder, after getting down to all the facts of the assault, visited the hospital in order to ascertain what immediate danger there was of the man dying that night and thus giving them a sensation for the morrow. The writer of this article was one of the anxious craft of that night. He visited the Homœopathic Hospital, and interviewed the doctor in charge. 'The man will die before morning,' said



the doctor; 'I can do nothing for him, and it would be only uselessly cruel to attempt by even dressing his wounds to save him.'

"Within one week, James Campbell escaped from this hospital alive. His smashed skull was simply a glancing scalp-wound."

At the trial of Sergeant Rogers of the police for killing Tweedy, it was a matter of evidence that the latter lay two days at the Homœopathic Hospital before his wounds were dressed.

When through the cracks so much light shines, one can well conceive how brilliant the illumination would be if the view were unobstructed. Will not, then, our readers do what they can to aid this impecunious and most deserving charity? Probably the Mayor would gladly receive donations.

## CORRESPONDENCE.

### THE BRITISH MEDICAL ASSOCIATION, FORTY-SECOND ANNUAL MEETING.

NORWICH, ENGLAND, }  
Thursday, Aug. 13, 1874. }

DEAR SIR,—The British Medical Association meets for the second time in the ancient city of Norwich, the first session having been held twenty-eight years ago. Norwich may be called the metropolis of the east of England, and was in the seventeenth century, as Macaulay writes of it, "the chief seat of manufactures of the realm." But the star of progress which ever leads westward has left in favor of the great manufacturing centres far away from it. Although still prominent in a few special lines of industry, it is now mostly known by its traditions and by its grand old remains of the past. Norwich strikes the traveller, particularly if he be an American and fresh from the newness, baldness, and bareness of our neoplastic development, as singularly quaint and ancient; and it is the type of the few remaining cities of England that retain their original architectural characteristics not destroyed before the march of modern improvement or crumbled by the eroding hand of time. The labyrinthine interlacement of narrow and tortuous streets, which are almost without sidewalks, the number of ancient cathedrals and churches with belfries chiming the echoes of centuries ago, the overhanging walls of low-browed cottage-looking dwelling-houses with peaked gables, all tend to a feeling as if the dial of time had been here turned backward to "the good old times" of a few centuries in the past.

Here is the old Norwich Castle, on the spot of a fortification built by "Uffa, King of the East Angles," in the year 575, and where Alfred the Great built a stronghold that was destroyed by Sweyn, the Danish king. Then Canute, in 1018, erected a castle, the core of which still stands in ornate architectural beauty within the present structure. Seven centuries ago it was, as

now, a prison, and in the reign of "Good Queen Bess" a record shows the imprisonment of some offenders who were "commytted for refusing to come to church in time for prayers;" and the philanthropic John Howard, in his humane visitation of prisons, complained of "an underground dungeon, in which the inmates descended by a ladder, the floor of which was often one or two feet deep with water."

The Cathedral of Norwich is eight hundred years old, and its imperishable walls are partly of flint that retains almost the original lustre of the fractured surfaces of the stones.

Norwich has a classic reputation for its great names of the past, and among those still living are some of the ablest and best-known medical men of this country. Dr. Cains, of Cambridge notoriety, was born here in 1510; Sir Thomas Browne was a Norwich physician; and the names of Martineau, Rigby, Dalrymple, Lubbock, Yelloby, and Crosse will ever be remembered.

Elaborate arrangements are made for conducting the business of the Association in various rooms for the general meeting of the body, and for the various sections of medicine, surgery, obstetrics, and State medicine, and there are also the most generous preparations for dinners and entertainments for the members and visitors. Private hospitality that will take no refusal stands with open doors and outstretched hands to welcome the stranger to those charming old English home-steads, and the home-like greeting that disarms all formality and blends him at once in family intimacy is something that requires the delightful experience for its appreciation.

A pleasant coincidence that adds to the gala character of the occasion is the arrival in the city of H.R.H. Prince Arthur, with a regiment of cavalry, who are to make permanent quarters here.

An important and interesting adjuvant of the meeting is the Annual Museum of articles arranged in the following classes: medical and surgical instruments and appliances; chemicals and apparatus; drugs and articles of diet; microscopes and apparatus, and microscopic specimens; calculi; general pathological specimens, casts, etc.; pathological photographs, drawings, and diagrams; drawings and models of ventilation; ancient instruments; miscellaneous.

I notice among the large number arriving such prominent members of the profession as Sir William Fergusson, Sir James Paget, Druitt, Reynolds, Croft, Sibson, Duncan, Barnes, Southam, Tupe, Quain, Barwell, Macleod, Tait, Hewitt, Sims, Parker, Lawson, Kidd, Haughton, Hart, Tufnell, Bennett, Aveling, Buchanan, Foster, Cormack, Lund, Steele, Nales, Stewart, Clarke, Haviland, Falconer; and such resident members as Cadge, Bateman, Copeman, Master, and Crosse are in attendance. About three hundred are at this time enrolled.

The meeting was opened by the president, Sir William Fergusson, in an eloquent address, alluding to the classic memories of the place, and particularly to its high professional character, developed by the line of

great surgeons whose names I have already mentioned. The distinguished and dignified bearing of the speaker, with his fine personal appearance, his tall, handsome, erect figure, his snowy hair, broad forehead, bright dark eyes, and pale intellectual face, make him a fitting personage to initiate the business of this important assemblage. It may be interesting to those who have not seen Sir William Fergusson to know that his resemblance to the late Dr. Wilson Jewell, of Philadelphia, is most decided and striking.

Then followed the address of the President-elect, Dr. Copeman, of Norwich, in which he considered some matters of sanitary science, and, alluding to the necessity, in the advanced stage of the science, of the division of labor in making physiological and clinical investigations, said,—

"When we consider what large numbers now belong to this Association, and the great amount of mind and talent embraced in it, it is difficult to say what are to be the limits of its usefulness and of its responsibility. It no doubt behooves us, individually and collectively, to turn over in our minds how we can best contribute to the accomplishment of the great results expected of us. Two things strike me as especially needful: first, that we should attempt the elucidation of many phenomena we meet with, by earnest physiological research; and, secondly, that we should endeavor, above all things, to add to the not too ample store of practical facts in the use of remedies for the cure of disease. These two departments of study cannot be fully undertaken by the same individuals.

"Physiological research, to be worth what it ought to be, requires the close application of vigorous minds adapted to the science and imbued with a love of it, but free also from all anxiety about the ways and means of providing for their daily wants and necessities. All so engaged ought to have, or be provided with, sufficient means to enable them to devote their whole time and attention to their work, without the cares and troubles of practice; whilst, on the other hand, those who are engaged in the great and paramount object of curing disease cannot possibly spare the necessary time for minute physiological investigations. Each, however, can materially assist the other: the practitioner can furnish facts and observations which may greatly assist the physiologist in his experiments, and the latter can enlighten the former by giving reasons for the facts presented to his notice. The majority of us must be practitioners, and earn our living by practice; but I should hope, in a society like ours, means will ere long be found to supply the necessary funds to a certain number of young and healthful minds, congenial to the work, to enable them to devote their time and energies to physiology as a separate study."

On the second day of the meeting, Dr. Russell Reynolds delivered the address in medicine, which was a beautifully philosophical reasoning on the mystery of life. He repudiated the idea of life being nothing more than an aggregation of the resultant movements of heat, light, electricity, etc. Impressions from without, he

said, may determine the occurrence of motion or sensation; but the secret of life is still hidden in the organism which transmits the one into the other. Physical force may be correlated to vital acts, but life itself is the special property or condition of the special material which effects that peculiar relation, and it is as far from comprehension now as it was a thousand years ago. Heat applied to a fertilized and living egg may set in motion all those chemical and physical changes and movements which make up the living processes of a growing bird; but if the egg be not living to begin with, heat but hastens another series of chemical changes,—those of disintegration, putrefaction, and decay. Life is still hidden in the wonderful cells from which all these changes of structure and function take their start. If we apply electricity to a nerve-trunk or a cerebral convulsion, motions of a definite character may result, but the secret of life still lies hidden in the properties of those nervous elements. Every so-called chemical "elementary body" is known only by its power of so modifying forces and material as to be distinct in its sum of properties from every other elementary body. Each of them has in itself a "something" which makes it what it is, and to which we unconsciously refer in thought when we give them names and places in scientific categories. This "tendency to individuation," as it has been called, is what constitutes that which has been termed their "life." The same mode of thought is true with regard to the living organic body: that which makes it living, which alone justifies the attribution to it of the properties of life, is the possession of an individual power of behaving in such a way under given circumstances, and amidst the brunt of conflicting forces, and surrounded by varying materials, that it evolves the phenomena we designate as vital. Many are disposed to think that if we could only make our experiments a little more clever we may get rid of the term and the idea of life itself, and so make a great advance in science. It may be that this will be done; but Dr. Reynolds believes that it will not, that there will ever remain the same kind of mystery with regard to life itself as that which still shrouds the nature of the simple forces.

The General Secretary, Mr. Fouhes, read the report of the Council, the president of which is Mr. Southam, of Manchester. The report stated that the Association now numbered between five and six thousand members; that its financial condition was satisfactory; that the income of the past year was \$42,000; and it was proposed that a grant of one thousand dollars be made in aid of researches in medicine and the allied sciences.

It was unanimously resolved that the next meeting of the Association shall be held in Edinburgh, under the presidency of Sir Robert Christison.

In the Section of Medicine, the President, Dr. Eade, considered the nervous system in reference to practical medicine, and alluded to the prevailing tendency of medical investigation in that direction as illustrated by the papers about to be presented at the meeting. He remarked that, "The more exact knowledge which we

now possess of the brain and its subdivisions, as well as of its vascular supply and distribution; also of the functions of the ganglionic and vaso-motor nerves; together with the ascertainment of the great principle that vascular supply is regulated by the inhibitory action of the nerves, and that removal of this governing influence and control admits of ungoverned local action, *i.e.*, disease—have been sufficient to stimulate to fresh and active inquiry in this direction. And well it may be so, when we see that many previously obscure diseases (notably chorea and epilepsy, and many varieties of paralysis) have been already rendered more intelligible through this knowledge, and that the whole process of inflammation itself is in a fair way of being at length referred to its evidently proper position of a paresis or functional paralysis."

The opening of the proceedings of the Section on Surgery was by Sir James Paget, who referred to his first surgical training in Norwich, before he left it for his after-studentship in London, and compared surgical practice of that day with the present. He referred to his early careful and full notes of cases and observations made here, and said, "I found there some things which made me fear lest in our progress we should have let fall some of the things which we had better have held, and are now regarding some things too lightly that then seemed very grave, and perhaps are so still. For among the records which I found are records of methods of practice now almost completely disused, and yet in which I feel confident there was much right. I find, for example, a large and almost uniform practice of bleeding for all acute diseases, for many chronic, for most of those that were unknown or uncertain, and for a large proportion of cases in which there seemed to be nothing the matter. Trying to learn something from these things, I came to one or two conclusions which I am sure the younger members of the profession need to have much impressed on them. One of them is that at the present day we undoubtedly over-value the blood and estimate too cautiously the loss of it. I will venture to say that there are few persons in this room who might not be bled to fainting, and to-morrow be almost unconscious of it, and perhaps, in this week of hospitalities, might even be the better."

R. J. LEVIS.

## SELECTIONS.

### PARTICULARS OF A CASE IN WHICH CARBURETTED HYDROGEN WAS FORMED IN THE HUMAN STOMACH—A READY METHOD OF WASHING OUT THE STOMACH.

TOWARDS the end of last year, a man presented himself, during the consulting-hour of Prof. Frerichs, who declared that he had both a gas- and a vinegar-manufactory in his stomach. These, he said, worked alternately, so that at one time he brought up quantities of strongly acidulated matter, at another he belched quantities of gas which burnt, when a lighted match was applied to it, with a brilliant flame. In

proof of this latter assertion, having twisted a piece of paper into a roll and placed it like a gas-burner in his mouth, he applied, at the moment of an eructation, a match to its end, when a brilliant bright-yellow flame, fully a foot long, burst forth.

There could be no doubt that we had here to do with a case of abnormal digestion, with the formation of stable and unstable products of fermentation; the question being, what was the nature of the latter. For though the eructation of inflammable gas from the stomach has already been observed, and the gas itself analyzed (*vide* the analysis of Carius and Popoff), still the color of the flame has invariably been a pale blue, showing the great preponderance of hydrogen; whereas in this case the yellow color of the flame seemed to show the presence of carburetted hydrogen.\*

The physical examination of the patient disclosed a very distended condition of the stomach, to account for which it seemed probable that there was a narrowing of the pylorus, caused by the contraction of a cicatrix of an ordinary round ulcer.

As I have for some time devoted myself to gasometrical analysis (*vide* my works "Ueber den CO<sub>2</sub> gehalt des Harns im Fieber," and "Beiträge zur Gasometrie menschliches Transudate," in Reichert and Du Bois-Reymond's *Archiv für Physiologie*), the chemical examination of the solid and gaseous excreta from our patient's stomach was confided by Prof. Frerichs to my colleague, Dr. Russstein, and myself.

The analyses were conducted in the usual manner, the gas being collected over quicksilver by means of a pipe from the patient's mouth, and gave the following volumetric results:

First Analysis.				Second Analysis.			
CO <sub>2</sub>	.	.	17.40	.	.	.	20.57
H	.	.	21.52	.	.	.	20.57
CH <sub>4</sub>	.	.	2.71	.	.	.	10.75
O	.	.	11.91	.	.	.	6.72
N	.	.	46.44	.	.	.	41.38

With traces of SH<sub>2</sub>.

In some of the matter vomited by the patient some days afterwards, we were able to demonstrate the presence of lactic, butyric, and acetic acids, and some of their homologues (not, however, quantitatively determined), sugar and dextrine.

Under the microscope all the well-known elements of food undergoing fermentation in the stomach were observed, of which I will only mention some very large specimens of *sarcina ventriculi*, the yeast fungus, and rod-shaped (*stäbchenförmige*) bodies, having the appearance of bacteria (the lactic acid fungus of Pasteur?).

[Dr. Ewald here enters upon an elaborate discussion of the fermentative changes resulting in the production of the gas in the stomach. This we omit.]

The treatment consisted in regulating carefully the patient's diet, and washing out the stomach by means of the stomach-pump. Under this treatment the discomfort he suffered was greatly lessened, and only once afterwards did he bring up inflammable gas, which, however, burnt with a blue flame. As he soon became quite an expert in introducing the stomach-pump, he has left us, and gone to the country to further recruit his health.

I will draw your attention to a very simple and readily available method of washing out the stomach, which I now always adopt, and which, on account of its great simplicity, seems likely to make the topical treatment of diseases of the stomach, especially in cases of poisoning, much more common. You take for

\* In the *Berlin. Klin. Wochenschrift*, July 6 and 13, *vide* *London Medical Record*, Aug. 12, the case of Carius above referred to is given in full, as well as some additional observations relating to this curious affection.—Ed. J. H. G.



this purpose a piece of ordinary india-rubber tubing, such as is used for gas-lamps, about six feet long; you next round one end with a scissors, and, if necessary, cut two holes at a short distance from the end. This tube possesses quite sufficient rigidity to be passed without difficulty into the stomach. To the outer end you now fit a funnel, into which you can pour either water or a solution of soda, etc., according to circumstances. If you want to remove the contents of the stomach, you must sink the outer end of the tube to a level with the pubis, or even lower; then let the patient make a short but forcible contraction of the abdominal walls. By this means the tube is filled to its highest point with the fluid contents of the stomach, and becomes a siphon, the liquid continuing to flow until there is no more, or till the tube has got stopped up. This last seldom occurs if the tube is of a moderate calibre. Should it, however, happen, or should the abdominal pressure be insufficient to fill the tube in the first instance, or the patient be insensible, or any similar difficulty arise, it can, in general, be readily overcome by fitting a common clyster syringe to the end of the tube, one stroke of the piston of which is generally sufficient to remove the difficulty, and the fluid continues to flow after the removal of the syringe. This method is evidently instantaneously available, provided that we can find a gas india-rubber tube; and it has another great advantage, viz., that with it any mechanical injury to the soft parts is impossible.\*

In cases where the œsophagus is almost impervious from stricture, compression, or any other cause, I am in the habit of using very thin gum-elastic tubing, made especially for this purpose, within which a very thin piece of whalebone, like the stilet of a catheter, is introduced, in order to give it the necessary rigidity. The whalebone can be withdrawn without difficulty once the tube is passed. Since I have adopted this method, it is only during the first or second introduction of the tube that I have experienced any difficulty arising from the discomfort the operation causes to the patient.—*Dr. Ewald, Charité Hospital, Berlin, in Irish Hospital Gazette.*

### GLEANINGS FROM OUR EXCHANGES.

**TUMOR OF THE BREAST IN A MAN AGED SIXTY-EIGHT.**—At the Surgical Society of Paris, a man aged sixty-eight was lately exhibited by M. Demarquay, from whom he had removed a tumor of the breast. The tumor was voluminous and composed of three cysts: the largest was of a bluish tinge, and threatened to burst. Complete absence of axillary glands. It first appeared three years ago. M. Demarquay stated that he had seen only two cases of cancer of the breast in men; the progress of the disease was rapid, and the axillary glands were affected. In the case under notice there is nothing of the kind; but a cyst was on the point of bursting, and an operation was, in consequence, considered advisable. Extirpation was performed without involving the pectoral aponeurosis; histological examination of the tumors proved the presence of cysts developed in the galactophorous tubes. M. Tillaux stated that, while he acknowledged the rarity of cancer of the breast in men, he had operated only a month ago on a man who had a tumor of the breast about the size of a large pea, which had attained its present volume in one year, and was accompanied by an abnormal development of the glands in the axilla. Microscopical examination proved the existence of cancer. The writer

of this note saw a case some four or five years ago in M. Maisonneuve's ward at the Hôtel-Dieu. The tumor was about the size of a Mandarin orange, which was removed by means of his caustic "flèches." The patient was a priest, aged about forty-five, and the tumor was rapid in its development; notwithstanding this, M. Maisonneuve was disposed to look upon the tumor as non-malignant, but microscopical examination proved it to be a cancerous tumor. This eminent surgeon stated that in all his practice, extending over forty years, this was only the second case he had met with.—*Paris Medical Record, July 1, 1874.*

**ALCOHOLIC STRENGTH OF THE VARIOUS BITTERS.**—Mr. Henry Vaughan, State Assayer of Rhode Island, gives the following results of a chemical examination of the more important "bitters" found in the market:

	Per cent.
Hostetter's Stomach Bitters . . . . .	43.20
Baker's Stomach Bitters . . . . .	40.57
Drake's Plantation Bitters . . . . .	30.24
Sol. Frank's Panacea Bitters . . . . .	37.20
Mishler's Herb Bitters . . . . .	36.80
Dr. R. F. Hibbaw's Wild Cherry Bitters . . . . .	35.89
Rush's Bitters "for the Stomach's Sake" . . . . .	34.30
Dr. Fisch's Bitters . . . . .	32.16
Baker's Orange Grove Bitters . . . . .	25.70
Speer's Standard Wine Bitters . . . . .	25.49
Traveller's Peruvian Bitters . . . . .	22.40
Dr. Clarke's Sherry Wine Bitters . . . . .	22.40
California Wine Bitters . . . . .	18.20
Dr. Wheeler's Tonic Sherry Wine Bitters . . . . .	14.66
Atwood's Quinine Tonic Bitters . . . . .	40.10
Dr. Holmes's Golden Seal Bitters . . . . .	34.24
Dr. Job Sweet's Strengthening Bitters . . . . .	31.41
Webber's Strengthening Bitters . . . . .	26.87
Flint's Quaker Bitters . . . . .	22.99
Restorative Bitters . . . . .	20.54
Luther's Temperance Bitters . . . . .	16.68
Richardson's Bitters . . . . .	59.14
Armington's Bitters . . . . .	33.26
Davis's Bitters . . . . .	30.50
Colton's Nervine Bitters . . . . .	29.73
Dr. Warren's Bilious Bitters . . . . .	29.60
Hartshorne's Bitters . . . . .	27.35
Atwood's Jaundice Bitters . . . . .	25.60
Puritan Bitters . . . . .	25.60
Dr. Langley's Bitters . . . . .	24.41
Dr. Hooftland's German Bitters . . . . .	20.85
Oxygenated Bitters . . . . .	19.28
Walker's Vinegar Bitters . . . . .	7.50
Dr. Pierce's Bitters . . . . .	6.36

—*The Laboratory.*

**DETERMINATION OF THE SEX IN UTERO** (*The Medical Examiner, August 15, 1874*).—Drs. Strong and Steele make the following deductions from their joint observations of one hundred cases:

1. In the majority of cases male foetal hearts are slower than female.
2. One hundred and thirty-two foetal pulsations per minute is the average which constitutes a dividing line between the sexes. Below this, sixty-eight and four-sevenths per cent. are males, twenty per cent. are females, eleven and three-sevenths per cent. are doubtful. Above this, fifty-three and one-third per cent. are females, twenty-six and two-thirds per cent. are males, twenty per cent. doubtful.
3. The most accurate observations are made during the last four weeks of gestation.
4. The rapidity of the heart's action is increased in proportion to the feebleness of the foetus.
5. Calcareous or fatty degeneration of the placenta renders the pulsations feeble and irregular.
6. In some cases it would be possible to diagnose

\* NOTE BY TRANSLATOR.—In the *British Medical Journal* of February 24, 1874, p. 205, will be found a description of a very similar apparatus for washing out the stomach, invented by L. H. Tosswill, M.B.

diseased conditions of the placenta from careful observation of the fetal heart.

In conclusion, it may be generally stated that an opinion as to the sex of the child, founded on the rate of the fetal pulse, is of little more value than a guess, while the presentation, generally, and the exact position, possibly, may be accurately determined.

**FATTY GROWTH IN THE CORPUS CALLOSUM** (*British Medical Journal*, July 18, 1874).—At an autopsy on a case of tubercular meningitis, Dr. Joseph Coats discovered a peculiar pathological condition which he describes as follows. On the upper surface of the corpus callosum there was an elongated yellow structure, occupying its entire length and in the middle line. It was of nearly the same bulk in every part, averaging about five-sixteenths of an inch in breadth, and about three-sixteenths in thickness. It had the appearance of a narrow ridge on the corpus callosum, and seemed to be involved in the pia mater, a layer of which covered its surface, and another separated it from the nervous tissue of the corpus callosum beneath. This growth was found, on microscopic examination, to be composed of typical adipose tissue, the large fat-cells having exactly the normal appearance.

**TREATMENT OF CHRONIC NASAL CATARRH** (*The American Medical Journal*, August, 1874).—Dr. John W. Thraillkill describes an instrument devised by himself for making topical applications of powdered substances to the nasal passages. It consists of a bent glass tube connected by a rubber tube with a glass mouth-piece. The powder is put into the glass tube, which is inserted into the nose to the distance of half an inch or more; the patient then puts the mouth-piece into his mouth, and blows the powder with a quick, strong blast into the nose. This plan has many advantages: the medicament is not drawn back into the pharynx, as when it is snuffed in, and it is distributed much more equally through the nasal cavities. A powder consisting of one drachm of calomel to two drachms of sugar of milk has been found highly efficacious in chronic cases of nasal catarrh which had lasted for years and had resisted treatment by douches, washes, etc.

**TRAUMATIC TETANUS—MORPHIA—RECOVERY** (*The Nashville Journal of Medicine and Surgery*, August, 1874).—Dr. R. D. Winsett reports the case of a cavalry officer, æt. 24, who received a wound in the glutei muscles, which was followed in six or seven days by marked tetanic symptoms, with spasms, complete trismus, and opisthotonos. He was ordered every three hours a pill containing one grain each of powdered camphor and assafœtida, and a half-grain each of extract of belladonna and sulphate of morphia. In addition, he was given a grain of sulphate of morphia every hour, with large quantities of gruel and milk-punch. He continued without much change for eight days, the same treatment being persevered in,—sixteen grains of morphia being given daily. At the end of that time he began to improve, and in a few weeks entirely recovered.

**CASE OF OCCLUSION OF THE GALL-BLADDER** (*British Medical Journal*, July 18, 1874).—Mr. Corrie Jackson, while making an autopsy on a case of apoplexy, discovered that the liver was enormously enlarged, to the weight of nearly ten pounds; the structure was tolerably healthy. The gall-bladder was filled with calculi, to the number of two hundred and thirty-seven; the aggregate weight being 420 grains. The calculi were an almost exact representation, in size, appearance, and color, of grains of Indian corn, rounded on their outer surfaces next the gall-bladder, and flattened internally by their compression and packing. There was

no form of jaundice. The ductus communis choledochus was patent; and the circulation of bile in the gall-bladder could only have been carried on in the interstices of the outer surfaces of the calculi. There was no history of any dyspepsia, constipation, or hemorrhoids.

**MAMMARY ABSCESS IN INFANTS** (*British Medical Journal*, August 8, 1874).—From a number of communications received, it seems that mammary abscess is of very frequent occurrence in children otherwise entirely healthy. It is sometimes due to improper irritation of the nipple by the nurse, but oftener to the retention of a secretion of thin milk, which takes place in the breasts of male as well as female children, and, when prevented from escaping, sets up inflammation and suppuration.

## MISCELLANY.

**MISSIONARY MEDICINE AND THE CHINESE.**—Dr. Dudgeon, in the annual report of the Peking Hospital for 1873 to the London Missionary Society, states that during the past year the entire number of patients prescribed for was 18,300. The influence of the hospital is said to be yearly extending, and its connection with the higher and official classes steadily increasing. A lectureship on anatomy and physiology in connection with the present college has, moreover, brought Dr. Dudgeon into close contact, professionally and otherwise, with the highest officials of the government.

A YOUNG Japanese, Susum Sato by name, has obtained, after a highly creditable examination, the degree of M.D., Berlin. His graduation thesis, on the subject of Infantile Diarrhœa, is said to have been exceptionally good. The rapidity and ease with which Mongolians devoted to study acquire a knowledge of foreign languages are remarkable.

DR. GEORGE M. BEARD, of New York, has issued an elaborate circular, asking for information in regard to cases of hay-fever. Those who are able and willing to aid him will please apply by letter for copies.

## NOTES AND QUERIES.

### THE ADAMS COUNTY MEDICAL ASSOCIATION.

This Association held its annual meeting on Tuesday, Sept. 1, and elected the following gentlemen as officers for the present year:

President, Dr. J. W. C. O'Neal.

First Vice-President, Dr. I. W. Pierson.

Second Vice-President, Dr. I. L. Baehr.

Recording Secretary, Dr. Charles Horner.

Corresponding Secretary, Dr. William J. McClure.

Treasurer, Dr. E. W. Mumma.

## OFFICIAL LIST

**OF CHANGES OF STATIONS AND DUTIES OF OFFICERS OF THE MEDICAL DEPARTMENT U.S. ARMY, FROM SEPTEMBER 1 TO SEPTEMBER 7, 1874, INCLUSIVE.**

HARTSUFF, A., ASSISTANT-SURGEON.—Assigned to duty as Post-Surgeon at Fort Laramie, Wyoming Territory. S. O. 126, Department of the Platte, August 29, 1874.

MONROE, F. LEB., ASSISTANT-SURGEON.—Granted leave of absence for one month, provided he furnishes a suitable substitute during his absence. S. O. 139, Department of the South, August 29, 1874.